

REMARKS

Claims 1-6 and 8-12 are now pending in the application. Claims 7, 13 and 14 are cancelled. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

PRIORITY

Applicant encloses a certified copy of priority document 2002-309584.

REJECTION UNDER 35 U.S.C. § 112

Claims 13 and 14 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point and distinctly claim the subject matter which Applicant regards as the invention. This rejection is respectfully traversed. Notwithstanding, Claims 13 and 14 are cancelled. Accordingly, this rejection is moot.

REJECTION UNDER 35 U.S.C. § 102

Claims 10-12 and 14 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Bruch (U.S. Pat. No. 6,814,422). This rejection is respectfully traversed.

Claim 14 is cancelled. Accordingly, this rejection is moot

Claim 10 is amended. The amendment reciting "a step of moving said discharge nozzle from a position at which said step of discharging said droplet is carried out, to another position at which an operation for detecting a discharge condition of said droplet which is discharged from said nozzle is carried out, during said carrying step" in claim 10 is based on FIGS. 1 and 4 and the description from page 13, line 24 to page 14, line

2, in the original specification of the present application. Accordingly, no new matter is added to claim 10.

Claim 10 calls for a device manufacturing method including a unique feature in that a "step of *moving a discharge nozzle* from a position at which a step of discharging a droplet is carried out, *to an another position* at which an operation for detecting a discharge condition of the droplet which is discharged from the discharge nozzle is carried out, during a carrying step of carrying a substrate".

According to the device manufacturing method having the above-mentioned unique feature, the carrying operation of the substrate and detecting operation of a discharge nozzle which cannot discharge the droplet (i.e., non-performing nozzle) can be performed *at the same time*, since: "a position at which the step of discharging a droplet is carried out" (i.e., a position of a stage for supporting the substrate) and "an another position at which an operation for detecting a discharge condition of the droplet which is discharged from the discharge nozzle" (i.e., a position of a detector) are *different locations*; and the carrying step and the detection step can be performed *independently*. Accordingly, it becomes possible to reliably achieve an object of the present invention (i.e., "an object of providing a device manufacturing apparatus and device manufacturing method which can perform detection of non-performing nozzles *without a decrease in throughput*, and manufactured devices having a desirable performance without missing dots, when manufacturing a device using a droplet discharge method" on page 2, lines 12 to 16, in the original specification of the present application).

On the other hand, U.S. Patent No. 6,814,422 (hereinafter "Bruch") discloses a drop detector 530 in FIG. 5; however, Bruch does not disclose an arrangement of a drop detector 530 within an inkjet printer 20. In addition, U.S. Patent No. 5,216,442 (hereinafter "Parks") discloses a full width printer head 18 in FIG. 1; however, Parks does not disclose moving the full width printer head 18 to another location for detecting a non-performing nozzle. Furthermore, U.S. Patent No. 6,371,590 (hereinafter "Hah") discloses displaying an error message; however, Hah discloses nothing regarding moving a printer head to detect a non-performing nozzle. Thus, none of Bruch, Parks, and Hah discloses nor suggests the above-mentioned feature of the present invention.

Accordingly, claim 10 of the present invention is novel and non-obvious in view of Bruch, Parks, and Hah, since it can obtain the above-mentioned advantage based on the above-mentioned feature which is not disclosed nor suggested in the prior art. Therefore, claim 10 should be allowable.

In addition, claims 11 and 12 of the present application should also be allowable due to their dependency on allowable claim 10.

Although the above-explanation is enough for understanding the novelty and the non-obviousness of claim 10 and claims 11 and 12, the Applicant would like to submit the following additional explanations in order to assist the Examiner's further understanding of the novelty and non-obviousness of the present invention.

If the carrying operation of the substrate and detecting operation of a non-performing nozzle are performed *at the same time* while a position of a stage for supporting the substrate and a position of a detector for detecting the non-performing nozzle are located *at the same location*, problems such a corruption between the

substrate and the discharge head accommodating the discharge nozzle may happen; thereby, causing destructions thereof. Of course, in such a case, the above-mentioned object of the present invention cannot be achieved. However, the present invention can avoid an occurrence of such problems since the carrying operation of the substrate and detecting operation of the non-performing nozzle are performed *at the different locations*.

REJECTION UNDER 35 U.S.C. § 103

Claims 1-5, 7-9 and 13 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Parks (U.S. Pat. No. 5,216,442) in view of Bruch (U.S. Pat. No. 6,814,422). This rejection is respectfully traversed.

Claims 7 and 13 are cancelled. Accordingly, this rejection is moot.

Claim 1 is amended. The amendment reciting "a driving device for moving said discharge head with respect to said detector" in currently amended claim 1, is based on FIG. 4 and "Then, the control unit CONT moves the discharge head by means of the driving device 4, to the location where the operation of detecting non-performing nozzles is carried out, that is, in the vicinity of the detection apparatus 30 (step S3)" from page 13, line 24 to page 14, line 2, in the original specification of the present application. Furthermore, the amendment reciting "said detector and said stage are provided at different locations" in claim 1 is based on original claim 7. Accordingly, no new matter is added to claim 1.

Claim 1 calls for a device manufacturing apparatus including the following unique features (i) and (ii):

(i) a driving device for moving a discharge head with respect to a detector is provided; and

(ii) the detector and a stage are provided *at different locations*.

According to the device manufacturing apparatus having the above-mentioned unique features (i) and (ii), as recited in claim 10, the carrying operation of the substrate and detecting operation of the non-performing nozzle can be performed *at the same time*, without causing any problems such as corruption between the substrate and the discharge head accommodating the discharge nozzle. Accordingly, it becomes possible to achieve the above-mentioned object of the present invention.

On the other hand, none of Bruch, Parks, and Hah discloses nor suggests the above-mentioned features (i) and (ii) of the present invention.

Accordingly, claim 1 of the present invention is novel and non-obvious in view of Bruch, Parks, and Hah, since it can obtain the above-mentioned advantage based on the above-mentioned features (i) and (ii) which are not disclosed nor suggested in the prior art. Therefore, claim 1 should be allowable.

In addition, claims 2 to 5, 8 and 9 should be allowable due to their dependency on allowable claim 1.

Although the above-explanation is enough for understanding the novelty and the non-obviousness of claims 1 to 5, 8 and 9, the Applicant would like to submit the following additional explanations in order to assist the Examiner's understanding of the novelty and the non-obviousness of the present invention.

Firstly, the above-mentioned additional explanations made for claim 10 are also applicable to claim 1. Furthermore, it should be noted that the device manufacturing apparatus according to claim 1 can obtain a further advantage that remarkable maintenance-ability can be obtained due to the following reason.

That is, when performing the detecting operation of the non-performing nozzle, droplets discharged from the discharge nozzle may be received and collected by a droplet-collecting device such as a tank or an absorption device. In such a case, the droplet-collecting device must be replaced every so often. In the present invention, since "the detector and the stage are provided at different locations", *such a droplet-collecting device can be disposed at a location departed from the stage on which carrying operation of the substrate is performed*; therefore, the replacement operation of the droplet-collecting device can be performed without interrupting the carrying operation of the substrate.

Accordingly, the productivity of the manufacturing apparatus of the present invention can be reliably maintained, while enabling the remarkable maintenance-ability.

Claim 6 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Parks (U.S. Pat. No. 5,216,442) in view of Bruch (U.S. Pat. No. 6,814,422) and Hah (U.S. Pat. No. 6,371,590). This rejection is respectfully traversed.

Claim 6 should be allowable due to its dependency on allowable claim 1.

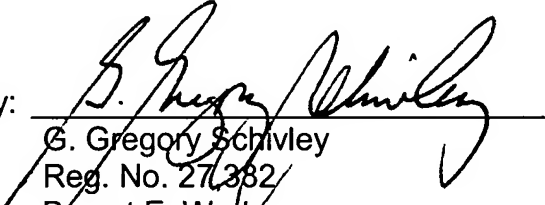
CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests

that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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